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WHAT IS CLAIMED IS:

1. A method of preparing porous materials,
comprising the steps of:

(A) making a solution containing silicon and
surfactant be in contact with a substrate having
alignment control ability; and

(B) drying said substrate made in contact
with the solution to remove the solvents
contained in said solution.

2. A method according to claim 1, wherein
silicon is contained in said solution in a state
of compound.

3. A method according to claim 1 or 2,
wherein silicon is contained in said solution as
silicon alkoxides.

4. A method of preparing porous materials,
comprising the steps of:
coating a substrate having alignment control
ability with a surfactant solution containing
silicon alkoxide; and
drying said substrate.

5. A method according to claim 4, wherein
patterned mesostructured silica with uniaxially

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aligned channel structure is formed by a step of coating a desired position of a substrate having alignment control ability with a surfactant solution containing silicon alkoxide in a
5 desired shape and a step of drying said substrate.

6. A method according to claim 4 or 5,
wherein said substrate with alignment control
10 ability is a silicon single crystal substrate having (110) orientation.

7. A method according to claim 4 or 5,
wherein said substrate is a substrate whose
15 surface is coated with a polymer compound film subjected to a rubbing process.

8. A method according to claim 4 or 5,
wherein said substrate is a substrate whose
20 surface is coated with a Langmuir-Blodgett film of polymer compound.

9. A method according to any one of claims
4 to 8, wherein the substrate is coated with the
25 surfactant solution by a pen lithography method.

10. A method according to any one of claims

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4 to 8, wherein the substrate is coated with the surfactant solution by an ink jet method.

11. A method according to any one of claims 4 to 8, wherein the substrate is coated with the surfactant solution by a dip coating method.

12. A method of preparing porous materials, comprising the steps of:

coating a substrate having alignment control ability with a solution of surfactant containing silicon alkoxides;

drying said substrate; and
removing the surfactant.

13. A method according to claim 12, wherein said step of coating said substrate with said solution is a step of selectively coating a desired position of said substrate with said solution in a desired shape.

14. A method according to claim 12 or 13, wherein said substrate with alignment control ability is a silicon single crystal substrate having (110) orientation.

15. A method according to claim 12 or 13,

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10 17. A method according to any one of claims
12 to 16, wherein said substrate is coated with
said surfactant solution by a pen lithography
method.

19. A method according to any one of claims
20 12 to 16, wherein said substrate is coated with
said surfactant solution by a dip coating method.

25 (A) attaching a solution containing silicon
and surfactant to a substrate having alignment
control ability; and

(B) removing the solvents contained in said solution attached to said substrate.

21. A method according to claim 20, wherein
5 silicon is contained in said solution in the form of compound.

22. A method according to claim 20, wherein
10 silicon is contained in said solution as silicon alkoxides.

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